

## WEST Search History

DATE: Monday, June 23, 2003

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
	<i>DB=USPT,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
L3	(preformed adj3 liposome\$) same detergent\$	40	L3
L2	l1 and load\$	670	L2
L1	liposome\$ same detergent\$	1190	L1

END OF SEARCH HISTORY

**WEST**

Generate Collection

Print

L3: Entry 5 of 40

File: USPT

Mar 18, 2003

DOCUMENT-IDENTIFIER: US 6534484 B1

TITLE: Methods for encapsulating plasmids in lipid bilayers

Detailed Description Text (12):

Although directed to the transfer of nucleic acids, and in particular to the transfer of plasmids to cells, the particles of the present invention can be used for delivering essentially any polyanionic molecule. As noted in the Background of the Invention, typical lipid-nucleic acid formulations are formed by combining the nucleic acid with a preformed cationic liposome (see, U.S. Pat. Nos. 4,897,355, 5,264,618, 5,279,833 and 5,283,185. In such methods, the nucleic acid is attracted to the cationic surface charge of the liposome and the resulting complexes are thought to be of the "sandwich-type" depicted in FIG. 1. As a result, a portion of the nucleic acid or plasmid remains exposed in serum and can be degraded by enzymes such as DNase I. Others have attempted to incorporate the nucleic acid or plasmid into the interior of a liposome during formation. These methods typically result in the aggregation in solution of the cationic lipid-nucleic acid complexes (see FIG. 2). Passive loading of a plasmid into a preformed liposome has also not proven successful. Finally, the liposome-plasmid complexes which have been formed are typically 200 to 400 nm in size and are therefore cleared more rapidly from circulation than smaller sized complexes or particles. The present invention provides a method of preparing serum-stable plasmid-lipid particles in which the plasmid is encapsulated in a lipid-bilayer and is protected from degradation. is Additionally, the particles formed have a size of about 50 to about 150 nm, with a majority of the particles being about 65 to 85 nm. The particles can be formed by either a detergent dialysis method or by a modification of a reverse-phase method which utilizes organic solvents to provide a single phase during mixing of the components. Without intending to be bound by any particular mechanism of formation, FIG. 3 depicts a detergent dialysis approach to the formation of the plasmid-lipid particles. With reference to FIG. 3, a plasmid or other large nucleic acid is contacted with a detergent solution of cationic lipids to form a coated plasmid complex. These coated plasmids can aggregate and precipitate. However, the presence of a detergent reduces this aggregation and allows the coated plasmids to react with excess lipids (typically, non-cationic lipids) to form particles in which the plasmid is encapsulated in a lipid bilayer. As noted above, these particles differ from the more classical liposomes both in size (liposomes being typically 200-400 nm) in that there is little or no aqueous medium encapsulated by the particle's lipid bilayer. The methods described below for the formation of plasmid-lipid particles using organic solvents follow a similar scheme.

**WEST**

Generate Collection

Print

L3: Entry 13 of 40

File: USPT

Sep 10, 2002

DOCUMENT-IDENTIFIER: US 6447800 B2

TITLE: Method of loading preformed liposomes using ethanol

Brief Summary Text (25):

15. German Patent No. DE 3635506 A1, Bartels et al., Apr. 28, 1988, Antrag auf Nichtnennung; discloses loading active ingredients into preformed liposomes by temporarily increasing membrane concentration by adding a low concentration of detergent.

**WEST**

Generate Collection

Print

L3: Entry 21 of 40

File: USPT

Jun 19, 2001

DOCUMENT-IDENTIFIER: US 6248353 B1

TITLE: Reconstitution of purified membrane proteins into preformed liposomes

Brief Summary Text (6):

There are essentially four presently known mechanisms for incorporating, i.e., reconstituting, proteins into liposomes. See Rigaud, J- L., et al., "Liposomes as Tools for the Reconstitution of Biological Systems," p. 71-88, in Liposomes as Tools in Basic Research and Industry, ed. Philippot, J. R. and Schuber, F., CRC Press, Boca Raton, Fla. (1995). One method involves the use of an organic solvent. However, such procedures often result in the denaturation of the proteins. A second method uses mechanical means to produce large and small unilamellar vesicles from MLVs by swelling of the dry phospholipid films in excess buffer. Such mechanical means include sonication of MLVs, forcing multilamellar lipid vesicles through a French press, or cycles of freeze-thawing or dehydration-rehydration. Drawbacks with sonication include variability and inactivation of certain proteins by sonication as well as production of small liposomes. A third process involves the direct incorporation of proteins into preformed small unilamellar liposomes, also termed spontaneous incorporation. Such methods are usually catalyzed by low cholate or lysolecithin concentrations. Problems with these methods include the wide size distribution of the proteoliposomes, heterogeneous distribution of the protein among the liposomes and presence of the non-phospholipid impurities, required for an effective protein incorporation, that would affect performance of those liposomes. The fourth and most often used method of incorporating proteins into liposomes involves the use of detergents. In such a method, the proteins and phospholipids are cosolubilized in a detergent to form micelles. The detergent is then removed, resulting in the spontaneous formation of bilayer vesicles with the protein incorporated therein. The detergent is incorporated into liposome as well as the protein and thus, these methods require removal of the detergent by methods such as dialysis, gel exclusion chromatography or adsorption on hydrophobic resins. The methods that use detergent are very slow because the detergent removal must be as complete as possible and also because a phase change that takes place during this process slows detergent removal even further. The detergent is also difficult to remove completely. Another disadvantage is that one cannot control the orientation of protein incorporated into the liposomes by using the detergent methods.

Brief Summary Text (21):

The present invention relates to methods for reconstituting purified membrane proteins into preformed liposomes, in the presence of at least one type of fatty acid. In one preferred embodiment, the present invention relates to such methods that do not use detergent.

Brief Summary Text (30):

The present invention relates to methods of reconstituting purified membrane proteins into preformed liposomes. The present methods enable such reconstitution without the use of detergent, as required in presently heretofore known methods. The term "detergent" refers to amphipathic compounds, for example long-chain hydrocarbon, terminated at one end by a polar group, often charged. These compounds include molecules whose charged polar group is highly soluble in water whereas the hydrocarbon does not readily enter the aqueous environment. Detergents, as used herein, include those without any charge, e.g., n-octyl-.beta.-D-glucopyranose (octylglucoside), anionic detergents, which carry a negative charge, e.g., dodecyl sulfate, and cationic detergents, which carry a positive charge, e.g.,

hexadecyltrimethylammoniumbromide.

Brief Summary Text (33):

The methods of the present invention enable the reconstitution of purified membrane proteins into preformed liposomes without the need to use detergent for the step of reconstitution.

**WEST**

Generate Collection

Print

L3: Entry 25 of 40

File: USPT

Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5981501 A

TITLE: Methods for encapsulating plasmids in lipid bilayers

Detailed Description Text (19):

Although directed to the transfer of nucleic acids, and in particular to the transfer of plasmids to cells, the particles of the present invention can be used for delivering essentially any polyanionic molecule. As noted in the Background of the Invention, typical lipid-nucleic acid formulations are formed by combining the nucleic acid with a preformed cationic liposome (see, U.S. Pat. Nos. 4,897,355, 5,264,618, 5,279,833 and 5,283,185. In such methods, the nucleic acid is attracted to the cationic surface charge of the liposome and the resulting complexes are thought to be of the "sandwich-type" depicted in FIG. 1. As a result, a portion of the nucleic acid or plasmid remains exposed in serum and can be degraded by enzymes such as DNase I. Others have attempted to incorporate the nucleic acid or plasmid into the interior of a liposome during formation. These methods typically result in the aggregation in solution of the cationic lipid-nucleic acid complexes (see FIG. 2). Passive loading of a plasmid into a preformed liposome has also not proven successful. Finally, the liposome-plasmid complexes which have been formed are typically 200 to 400 nm in size and are therefore cleared more rapidly from circulation than smaller sized complexes or particles. The present invention provides a method of preparing serum-stable plasmid-lipid particles in which the plasmid is encapsulated in a lipid-bilayer and is protected from degradation. Additionally, the particles formed have a size of about 50 to about 150 nm, with a majority of the particles being about 65 to 85 nm. The particles can be formed by either a detergent dialysis method or by a modification of a reverse-phase method which utilizes organic solvents to provide a single phase during mixing of the components. Without intending to be bound by any particular mechanism of formation, FIG. 3 depicts a detergent dialysis approach to the formation of the plasmid-lipid particles. With reference to FIG. 3, a plasmid or other large nucleic acid is contacted with a detergent solution of cationic lipids to form a coated plasmid complex. These coated plasmids can aggregate and precipitate. However, the presence of a detergent reduces this aggregation and allows the coated plasmids to react with excess lipids (typically, non-cationic lipids) to form particles in which the plasmid is encapsulated in a lipid bilayer. As noted above, these particles differ from the more classical liposomes both in size (liposomes being typically 200-400 nm) in that there is little or no aqueous medium encapsulated by the particle's lipid bilayer. The methods described below for the formation of plasmid-lipid particles using organic solvents follow a similar scheme.

**WEST**

Generate Collection

Print

L3: Entry 27 of 40

File: USPT

Jul 14, 1998

DOCUMENT-IDENTIFIER: US 5780052 A

TITLE: Compositions and methods useful for inhibiting cell death and for delivering an agent into a cell

Detailed Description Text (27):

Methods are known in the prior art for preparing immunoliposomes. Immunoliposomes are prepared, for example, by adsorption of proteins (e.g., immunoglobulin) on the liposomal surface; incorporation of native protein into the liposome membrane during its formation (e.g., by ultrasonication, detergent dialysis or reverse phase evaporation); covalent binding (direct or via a spacer group) of a protein to reactive compounds incorporated into the liposomes membrane; noncovalent hydrophobic binding of modified proteins during liposome formation or by the incubation with preformed liposomes; and indirect binding, including covalent binding of immunoglobulin protein via a polymer to the liposome (see Torchilin, V. P. CRC Critical reviews in Therapeutic Drug Carrier Systems, vol. 2(1), hereby incorporated by reference).

**WEST**

Generate Collection

Print

L3: Entry 29 of 40

File: USPT

Jun 16, 1998

DOCUMENT-IDENTIFIER: US 5766625 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Artificial viral envelopes

Other Reference Publication (6):

Rolf Schubert et al. (1991) "Loading of preformed liposomes with high trapping efficiency by detergent-induced formation of transient membrane holes" Chermistry and Physics of Lipids 58:121-129.



**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 30 of 40 returned.**☐ 1. Document ID: US 6566325 B2

L3: Entry 1 of 40

File: USPT

May 20, 2003

US-PAT-NO: 6566325

DOCUMENT-IDENTIFIER: US 6566325 B2

TITLE: 49 human secreted proteins

DATE-ISSUED: May 20, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Moore; Paul A.	Germantown	MD		
Ruben; Steven M.	Olney	MD		
Olsen; Henrik S.	Gaithersburg	MD		
Shi; Yanggu	Gaithersburg	MD		
Rosen; Craig A.	Laytonsville	MD		
Florence; Kimberly A.	Rockville	MD		
Soppet; Daniel R.	Centreville	VA		
LaFleur; David W.	Washington	DC		
Endress; Gregory A.	Potomac	MD		
Ebner; Reinhard	Gaithersburg	MD		
Komatsoulis; George	Silver Spring	MD		
Duan; Roxanne D.	Bethesda	MD		

US-CL-CURRENT: 514/2; 530/300, 530/350

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 2. Document ID: US 6544761 B2

L3: Entry 2 of 40

File: USPT

Apr 8, 2003

US-PAT-NO: 6544761

DOCUMENT-IDENTIFIER: US 6544761 B2

TITLE: Human tissue inhibitor of metalloproteinase-4

DATE-ISSUED: April 8, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Greene; John M.	Gaithersburg	MD		
Rosen; Craig A.	Laytonsville	MD		

US-CL-CURRENT: 435/69.2; 514/12, 530/350, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Draw Desc	Image										

☐ 3. Document ID: US 6537966 B1

L3: Entry 3 of 40

File: USPT

Mar 25, 2003

US-PAT-NO: 6537966

DOCUMENT-IDENTIFIER: US 6537966 B1

TITLE: Follistatin-3

DATE-ISSUED: March 25, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Duan; D. Roxanne	Bethesda	MD		
Ruben; Steven M.	Olney	MD		

US-CL-CURRENT: 514/2; 435/252.3, 435/254.11, 435/320.1, 435/325, 435/471, 435/69.1, 435/69.4, 435/71.1, 435/71.2, 514/12, 514/8, 530/350, 530/399, 530/402

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 4. Document ID: US 6534631 B1

L3: Entry 4 of 40

File: USPT

Mar 18, 2003

US-PAT-NO: 6534631

DOCUMENT-IDENTIFIER: US 6534631 B1

TITLE: Secreted protein HT5GJ57

DATE-ISSUED: March 18, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ruben; Steven M.	Olney	MD		
Komatsoulis; George	Silver Spring	MD		
Duan; Roxanne D.	Bethesda	MD		
Rosen; Craig A.	Laytonsville	MD		
Moore; Paul A.	Germantown	MD		
Shi; Yanggu	Gaithersburg	MD		
LaFleur; David W.	Washington	DC		
Ebner; Reinhard	Gaithersburg	MD		
Olsen; Henrik	Gaithersburg	MD		
Brewer; Laurie A.	St. Paul	MN		
Florence; Kimberly A.	Rockville	MD		
Young; Paul	Gaithersburg	MD		
Mucenski; Michael	Cincinnati	OH		
Endress; Gregory A.	Potomac	MD		
Soppet; Daniel R.	Centreville	VA		

US-CL-CURRENT: 530/350; 435/320.1, 435/325, 530/300, 536/23.1, 536/24.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 5. Document ID: US 6534484 B1

L3: Entry 5 of 40

File: USPT

Mar 18, 2003

US-PAT-NO: 6534484

DOCUMENT-IDENTIFIER: US 6534484 B1

TITLE: Methods for encapsulating plasmids in lipid bilayers

DATE-ISSUED: March 18, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wheeler; Jeffery J.	Richmond			CA
Hope; Michael	Vancouver			CA
Cullis; Pieter R.	Vancouver			CA
Bally; Marcel B.	Bowen Island			CA

US-CL-CURRENT: 514/44; 264/4.3, 264/4.6, 424/450, 436/829, 514/55, 514/851

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 6. Document ID: US 6528087 B2

L3: Entry 6 of 40

File: USPT

Mar 4, 2003

US-PAT-NO: 6528087

DOCUMENT-IDENTIFIER: US 6528087 B2

TITLE: Kits for forming protein-linked lipidic microparticles

DATE-ISSUED: March 4, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Papahadjopoulos; Demetrios	San Francisco	CA		
Hong; Keelung	San Francisco	CA		
Zheng; Weiwen	San Francisco	CA		
Kirpotin; Dmitri B.	San Francisco	CA		

US-CL-CURRENT: 424/450

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	K00C
Draw Desc	Image									

☐ 7. Document ID: US 6506386 B1

L3: Entry 7 of 40

File: USPT

Jan 14, 2003

US-PAT-NO: 6506386

DOCUMENT-IDENTIFIER: US 6506386 B1

TITLE: Vaccine comprising an iscom consisting of sterol and saponin which is free of additional detergent

DATE-ISSUED: January 14, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Friede; Martin	Farnham			GB
Garcon; Nathalie	Wavre			BE

US-CL-CURRENT: 424/184.1; 424/278.1, 424/283.1, 514/25

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	K00C
Draw Desc	Image									

☐ 8. Document ID: US 6495129 B1

L3: Entry 8 of 40

File: USPT

Dec 17, 2002

US-PAT-NO: 6495129

DOCUMENT-IDENTIFIER: US 6495129 B1

TITLE: Methods of inhibiting hematopoietic stem cells using human myeloid progenitor inhibitory factor-1 (MPIF-1) (Ckbeta-8/MIP-3)

DATE-ISSUED: December 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Li; Haodong	Gaithersburg	MD		
Ruben; Steven M.	Olney	MD		

US-CL-CURRENT: 424/85.1; 514/12, 514/2, 514/8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 9. Document ID: US 6495128 B1

L3: Entry 9 of 40

File: USPT

Dec 17, 2002

US-PAT-NO: 6495128

DOCUMENT-IDENTIFIER: US 6495128 B1

TITLE: Human chemokine .beta.-7 deletion and substitution proteins

DATE-ISSUED: December 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Salcedo; Theodora W.	Gaithersburg	MD		
Patel; Vikram P.	Germantown	MD		
Nibbs; Robert John Benjamin	Glasgow			GB
Graham; Gerard John	Glasgow			GB

US-CL-CURRENT: 424/85.1; 435/254.11, 435/254.3, 435/320.1, 435/325, 435/471,  
435/69.5, 435/69.7, 435/71.1, 435/71.2, 530/324, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 10. Document ID: US 6476195 B1

L3: Entry 10 of 40

File: USPT

Nov 5, 2002

US-PAT-NO: 6476195

DOCUMENT-IDENTIFIER: US 6476195 B1

TITLE: Secreted protein HNFGF20

DATE-ISSUED: November 5, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Komatsoulis; George	Silver Spring	MD		
Rosen; Craig A.	Laytonsville	MD		
Ruben; Steven M.	Olney	MD		
Duan; Roxanne D.	Bethesda	MD		
Moore; Paul A.	Germantown	MD		
Shi; Yanggu	Gaithersburg	MD		
LaFleur; David W.	Washington	DC		
Wei; Ying-Fei	Berkeley	CA		
Ni; Jian	Rockville	MD		
Florence; Kimberly A.	Rockville	MD		
Young; Paul	Gaithersburg	MD		
Brewer; Laurie A.	St. Paul	MN		
Soppet; Daniel R.	Centreville	VA		
Endress; Gregory A.	Potomac	MD		
Ebner; Reinhard	Gaithersburg	MD		
Olsen; Henrik	Gaithersburg	MD		
Mucenski; Michael	Cincinnati	OH		

US-CL-CURRENT: 530/350; 435/6, 435/7.1, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

K000

☐ 11. Document ID: US 6475753 B1

L3: Entry 11 of 40

File: USPT

Nov 5, 2002

US-PAT-NO: 6475753

DOCUMENT-IDENTIFIER: US 6475753 B1

TITLE: 94 Human Secreted Proteins

DATE-ISSUED: November 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ruben; Steven M.	Olney	MD		
Ni; Jian	Rockville	MD		
Rosen; Craig A.	Laytonsville	MD		
Wei; Ying-Fei	Berkeley	CA		
Young; Paul	Gaithersburg	MD		
Florence; Kimberly	Rockville	MD		
Soppet; Daniel R.	Centreville	VA		
Brewer; Laurie A.	St. Paul	MN		
Endress; Gregory A.	Potomac	MD		
Carter; Kenneth C.	Potomac	MD		
Mucenski; Michael	Cincinnati	OH		
Ebner; Reinhard	Gaithersburg	MD		
Laflaur; David W.	Washington	DC		
Olsen; Henrik	Gaithersburg	MD		
Shi; Yanggu	Gaithersburg	MD		
Moore; Paul A.	Germantown	MD		
Komatsoulis; George	Silver Spring	MD		

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/325, 435/471, 435/69.4, 435/71.1,  
530/350, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 12. Document ID: US 6472512 B1

L3: Entry 12 of 40

File: USPT

Oct 29, 2002

US-PAT-NO: 6472512

DOCUMENT-IDENTIFIER: US 6472512 B1

TITLE: Keratinocyte derived interferon

DATE-ISSUED: October 29, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
LaFleur; David W.	Washington	DC		
Moore; Paul A.	Germantown	MD		
Ruben; Steven M.	Olney	MD		

US-CL-CURRENT: 530/388.2; 435/331, 435/335, 435/7.92, 530/388.15, 530/389.2,  
530/391.3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 13. Document ID: US 6447800 B2

L3: Entry 13 of 40

File: USPT

Sep 10, 2002

US-PAT-NO: 6447800

DOCUMENT-IDENTIFIER: US 6447800 B2

TITLE: Method of loading preformed liposomes using ethanol

DATE-ISSUED: September 10, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hope; Michael J.	Vancouver			CA

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.6, 424/1.21, 424/417, 424/9.321,  
424/9.51

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 14. Document ID: US 6444793 B1

L3: Entry 14 of 40

File: USPT

Sep 3, 2002

US-PAT-NO: 6444793

DOCUMENT-IDENTIFIER: US 6444793 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Hydrophobically-modified hedgehog protein compositions and methods

DATE-ISSUED: September 3, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Pepinsky; R. Blake	Arlington	MA		
Baker; Darren P.	Hingham	MA		
Wen; Dingyi	Waltham	MA		
Williams; Kevin P.	Natick	MA		
Garber; Ellen A.	Cambridge	MA		
Taylor; Frederick R.	Milton	MA		
Galdes; Alphonse	Lexington	MA		
Porter; Jeffrey	Cambridge	MA		

US-CL-CURRENT: 530/402; 436/71, 530/350, 530/359, 530/399

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 15. Document ID: US 6433145 B1

L3: Entry 15 of 40

File: USPT

Aug 13, 2002

US-PAT-NO: 6433145

DOCUMENT-IDENTIFIER: US 6433145 B1

TITLE: Keratinocyte derived interferon



DATE-ISSUED: August 13, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
LaFleur; David W.	Washington	DC		
Moore; Paul A.	Germantown	MD		
Ruben; Steven M.	Olney	MD		

US-CL-CURRENT: 530/351; 424/85.4, 435/7.1, 530/350

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K000C

☐ 16. Document ID: US 6410049 B1

L3: Entry 16 of 40

File: USPT

Jun 25, 2002

US-PAT-NO: 6410049

DOCUMENT-IDENTIFIER: US 6410049 B1

TITLE: Preparation of stable formulations of lipid-nucleic acid complexes for efficient in vivo delivery

DATE-ISSUED: June 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Papahadjopoulos; Demetrios	San Francisco	CA		
Hong; Keelung	San Francisco	CA		
Zheng; Weiwen	San Francisco	CA		

US-CL-CURRENT: 424/450; 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K000C

☐ 17. Document ID: US 6391589 B1

L3: Entry 17 of 40

File: USPT

May 21, 2002

US-PAT-NO: 6391589

DOCUMENT-IDENTIFIER: US 6391589 B1

TITLE: Human chemokine beta-10 mutant polypeptides

DATE-ISSUED: May 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Olsen; Henrik S.	Gaithersburg	MD		
Li; Haodong	Gaithersburg	MD		
Adams; Mark D.	North Potomac	MD		
Gentz; Solange H. L.	Rockville	MD		
Alderson; Ralph	Gaithersburg	MD		
Li; Yuling	Germantown	MD		
Parmelee; David	Rockville	MD		
White; John R.	Coatsville	PA		
Appelbaum; Edward R.	Blue Bell	PA		

US-CL-CURRENT: 435/69.5; 424/85.1, 435/252.3, 435/254.11, 435/320.1, 435/325,  
435/471, 435/71.1, 435/71.2, 514/12, 514/2, 514/8, 530/324, 536/23.1, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMCC
Draw Desc	Image									

---

☐ 18. Document ID: US 6372473 B1

L3: Entry 18 of 40

File: USPT

Apr 16, 2002

US-PAT-NO: 6372473

DOCUMENT-IDENTIFIER: US 6372473 B1

TITLE: Tissue plasminogen activator-like protease

DATE-ISSUED: April 16, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Moore; Paul A.	Germantown	MD		
Ruben; Steven M.	Olney	MD		
Ebner; Reinhard	Gaithersburg	MD		

US-CL-CURRENT: 435/212; 435/217, 530/327, 530/328, 530/350, 530/827, 530/828

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMCC
Draw Desc	Image									

---

☐ 19. Document ID: US 6365369 B1

L3: Entry 19 of 40

File: USPT

Apr 2, 2002

US-PAT-NO: 6365369

DOCUMENT-IDENTIFIER: US 6365369 B1

TITLE: Prostate specific secreted protein

DATE-ISSUED: April 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Endress; Gregory A.	Potomac	MD		
Rosen; Craig A.	Laytonsville	MD		

US-CL-CURRENT: 435/69.1; 435/320.1, 435/410, 530/350, 536/18.7, 536/22.1, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWOC
Draw Desc	Image									

☐ 20. Document ID: US 6352716 B1

L3: Entry 20 of 40

File: USPT

Mar 5, 2002

US-PAT-NO: 6352716

DOCUMENT-IDENTIFIER: US 6352716 B1

TITLE: Steroidal liposomes

DATE-ISSUED: March 5, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Lawrenceville	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul A.	Hamilton	NJ		
Swenson; Christine E.	Princeton Junction	NJ		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.6, 424/1.21, 424/9.1, 436/829, 514/182, 514/78, 514/887, 514/967

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWOC
Draw Desc	Image									

☐ 21. Document ID: US 6248353 B1

L3: Entry 21 of 40

File: USPT

Jun 19, 2001

US-PAT-NO: 6248353

DOCUMENT-IDENTIFIER: US 6248353 B1

TITLE: Reconstitution of purified membrane proteins into preformed liposomes

DATE-ISSUED: June 19, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Singh; Pratap	Wilmington	DE		

US-CL-CURRENT: 424/450; 424/94.3, 436/829, 530/350, 530/381

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K/MC

☐ 22. Document ID: US 6210707 B1

L3: Entry 22 of 40

File: USPT

Apr 3, 2001

US-PAT-NO: 6210707

DOCUMENT-IDENTIFIER: US 6210707 B1

TITLE: Methods of forming protein-linked lipidic microparticles, and compositions thereof

DATE-ISSUED: April 3, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Papahadjopoulos; Demetrios	San Francisco	CA		
Hong; Keelung	San Francisco	CA		
Zheng; Weiwen	San Francisco	CA		
Kirpotin; Dmitri B.	San Francisco	CA		

US-CL-CURRENT: 424/450; 435/440, 435/6, 435/7.1, 435/7.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K/MC

☐ 23. Document ID: US 6110666 A

L3: Entry 23 of 40

File: USPT

Aug 29, 2000

US-PAT-NO: 6110666

DOCUMENT-IDENTIFIER: US 6110666 A

TITLE: Locus control subregions conferring integration-site independent transgene expression abstract of the disclosure

DATE-ISSUED: August 29, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Grosveld; Franklin Gerardus	Rotterdam			NL
Ellis; James	Toronto			CA
Kioussis; Dimitris	London			GB

US-CL-CURRENT: 435/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K/MC

☐ 24. Document ID: US 6071533 A

L3: Entry 24 of 40

File: USPT

Jun 6, 2000

US-PAT-NO: 6071533

DOCUMENT-IDENTIFIER: US 6071533 A

TITLE: Preparation of stable formulations of lipid-nucleic acid complexes for efficient in vivo delivery

DATE-ISSUED: June 6, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Papahadjopoulos; Demetrios	San Francisco	CA		
Hong; Keelung	San Francisco	CA		
Zheng; Weiwen	San Francisco	CA		

US-CL-CURRENT: 424/450

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 25. Document ID: US 5981501 A

L3: Entry 25 of 40

File: USPT

Nov 9, 1999

US-PAT-NO: 5981501

DOCUMENT-IDENTIFIER: US 5981501 A

TITLE: Methods for encapsulating plasmids in lipid bilayers

DATE-ISSUED: November 9, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wheeler; Jeffery J.	Richmond			CA
Hope; Michael	Vancouver			CA
Cullis; Pieter R.	Vancouver			CA
Bally; Marcel B.	Bowen Island			CA

US-CL-CURRENT: 514/44; 264/4.3, 264/4.6, 424/450, 436/829, 514/55, 514/851

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 26. Document ID: US 5976567 A

L3: Entry 26 of 40

File: USPT

Nov 2, 1999

US-PAT-NO: 5976567

DOCUMENT-IDENTIFIER: US 5976567 A

TITLE: Lipid-nucleic acid particles prepared via a hydrophobic lipid-nucleic acid complex intermediate and use for gene transfer

DATE-ISSUED: November 2, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wheeler; Jeffery J.	Richmond			CA
Bally; Marcel B.	Bowen Island			CA
Zhang; Yuan-Peng	Vancouver			CA
Reimer; Dorothy L.	Vancouver			CA
Hope; Michael	Vancouver			CA
Cullis; Pieter R.	Vancouver			CA
Scherrer; Peter	Vancouver			CA

US-CL-CURRENT: 424/450; 435/458, 514/44

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 27. Document ID: US 5780052 A

L3: Entry 27 of 40

File: USPT

Jul 14, 1998

US-PAT-NO: 5780052

DOCUMENT-IDENTIFIER: US 5780052 A

TITLE: Compositions and methods useful for inhibiting cell death and for delivering an agent into a cell

DATE-ISSUED: July 14, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Khaw; Ban An	Milton	MA		
Torchilin; Vladmir P.	Charlestown	MA		
Narula; Jagat	Brookline	MA		
Vural; Imran	Brookline	MA		

US-CL-CURRENT: 424/450; 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 28. Document ID: US 5766902 A

L3: Entry 28 of 40

File: USPT

Jun 16, 1998

US-PAT-NO: 5766902

DOCUMENT-IDENTIFIER: US 5766902 A

TITLE: Transfection process

DATE-ISSUED: June 16, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Craig; Roger Kingdon	Smallwood			GB
Antoniou; Mike	Edgware			GB
Djeha; Hakim	West Didbury			GB

US-CL-CURRENT: 435/461; 435/173.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 29. Document ID: US 5766625 A

L3: Entry 29 of 40

File: USPT

Jun 16, 1998

US-PAT-NO: 5766625

DOCUMENT-IDENTIFIER: US 5766625 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Artificial viral envelopes

DATE-ISSUED: June 16, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schreier; Hans	Hermitage	TN		
Chander; Ramesh	Bombay			IN
Stecenko; Arlene A.	Nashville	TN		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 424/192.1, 424/204.1, 424/208.1, 424/812, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 30. Document ID: US 5756353 A

L3: Entry 30 of 40

File: USPT

May 26, 1998

US-PAT-NO: 5756353

DOCUMENT-IDENTIFIER: US 5756353 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Expression of cloned genes in the lung by aerosol-and liposome-based delivery

DATE-ISSUED: May 26, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Debs; Robert J.	Mill Valley	CA		

US-CL-CURRENT: 514/44; 128/200.14, 424/450, 435/320.1, 435/375, 435/377, 435/458, 435/459, 435/6, 435/69.1, 435/91.1, 536/24.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw	Desc	Image								

Generate Collection    Print

Terms	Documents
(preformed adj3 liposome\$) same detergent\$	40

Display Format: -    Change Format

[Previous Page](#)    [Next Page](#)



## WEST

[Generate Collection](#)[Print](#)

## Search Results - Record(s) 31 through 40 of 40 returned.

☐ 31. Document ID: US 5753258 A

L3: Entry 31 of 40

File: USPT

May 19, 1998

US-PAT-NO: 5753258

DOCUMENT-IDENTIFIER: US 5753258 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Artificial viral envelopes

DATE-ISSUED: May 19, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schreier; Hans	Hermitage	TN		
Chander; Ramesh	Bombay			IN
Stecenko; Arlene A.	Nashville	TN		

US-CL-CURRENT: [424/450](#); [424/130.1](#), [424/184.1](#), [424/188.1](#), [436/829](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWOC
Draw Desc	Image										

☐ 32. Document ID: US 5366958 A

L3: Entry 32 of 40

File: USPT

Nov 22, 1994

US-PAT-NO: 5366958

DOCUMENT-IDENTIFIER: US 5366958 A

TITLE: Localized delivery using fibronectin conjugates

DATE-ISSUED: November 22, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Weiner; Alan L.	Plainsboro	NJ		
Lenk; Robert P.	Lambertville	NJ		
Carpenter-Green; Sharon S.	Cranbury	NJ		
Fountain; Michael W.	Plainsboro	NJ		

US-CL-CURRENT: [514/2](#); [424/450](#), [530/380](#), [530/810](#), [530/812](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWOC
Draw Desc	Image										

☐ 33. Document ID: US 5288499 A

L3: Entry 33 of 40

File: USPT

Feb 22, 1994

US-PAT-NO: 5288499

DOCUMENT-IDENTIFIER: US 5288499 A

TITLE: Sterodial liposomes

DATE-ISSUED: February 22, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Lawrenceville	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul A.	Hamilton	NJ		
Swenson; Christine E.	Princeton Junction	NJ		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.6, 424/1.21, 424/9.4, 428/402.2, 436/829,  
514/167, 514/78, 514/887, 514/967

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 34. Document ID: US 5279833 A

L3: Entry 34 of 40

File: USPT

Jan 18, 1994

US-PAT-NO: 5279833

DOCUMENT-IDENTIFIER: US 5279833 A

TITLE: Liposomal transfection of nucleic acids into animal cells

DATE-ISSUED: January 18, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rose; John K.	Guilford	CT		

US-CL-CURRENT: 424/450; 435/6, 435/7.21, 435/7.23, 435/7.25, 436/71, 558/169,  
558/172, 564/282, 564/291, 564/463

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 35. Document ID: US 5231112 A

L3: Entry 35 of 40

File: USPT

Jul 27, 1993

US-PAT-NO: 5231112

DOCUMENT-IDENTIFIER: US 5231112 A

TITLE: Compositions containing tris salt of cholesterol hemisuccinate and antifungal

DATE-ISSUED: July 27, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Lawrenceville	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul A.	Hamilton	NJ		
Swenson; Christine E.	Princeton Junction	NJ		

US-CL-CURRENT: 514/401, 424/DIG.15, 514/887, 514/967

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 36. Document ID: US 4891208 A

L3: Entry 36 of 40

File: USPT

Jan 2, 1990

US-PAT-NO: 4891208

DOCUMENT-IDENTIFIER: US 4891208 A

TITLE: Steroidal liposomes

DATE-ISSUED: January 2, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Plainsboro	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul A.	Hamilton	NJ		
Swenson; Christine E.	Plainsboro	NJ		

US-CL-CURRENT: 424/1.21, 264/4.1, 264/4.6, 424/450, 424/9.4, 424/9.6, 428/402.2, 436/829, 514/167, 514/3, 514/396, 514/78, 514/885, 514/887, 514/967, 604/891.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 37. Document ID: US 4721612 A

L3: Entry 37 of 40

File: USPT

Jan 26, 1988

US-PAT-NO: 4721612

DOCUMENT-IDENTIFIER: US 4721612 A

TITLE: Steroidal liposomes

DATE-ISSUED: January 26, 1988

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Popescu; Mircea C.	Plainsboro	NJ		
Weiner; Alan L.	Plainsboro	NJ		
Bolcsak; Lois E.	Lawrenceville	NJ		
Tremblay; Paul S.	Hamilton	NJ		

US-CL-CURRENT: 424/1.21, 264/4.1, 264/4.6, 424/450, 424/9.4, 424/9.6, 428/402.2,  
436/52, 436/829, 514/167, 514/78, 514/887, 514/967

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 38. Document ID: WO 2082078 A2

L3: Entry 38 of 40

File: EPAB

Oct 17, 2002

PUB-NO: WO002082078A2

DOCUMENT-IDENTIFIER: WO 2082078 A2

TITLE: ACTIVATED ENZYME-LINKED DETECTION SYSTEMS FOR DETECTING AND QUANTIFYING  
NUCLEID ACIDS, ANTIGENS, ANTIBODIES AND OTHER ANALYTES

PUBN-DATE: October 17, 2002

## INVENTOR-INFORMATION:

NAME	COUNTRY
BREDEHORST, REINHARD	DE
HINTSCHE, RAINER	DE
HEUBERGER, ANTON	DE

INT-CL (IPC): G01 N 33/48

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 39. Document ID: WO 2081739 A2

L3: Entry 39 of 40

File: EPAB

Oct 17, 2002

PUB-NO: WO002081739A2

DOCUMENT-IDENTIFIER: WO 2081739 A2

TITLE: NON-ENZYMATIC LIPOSOME-LINKED CLOSELY SPACED ARRAY ELECTRODES ASSAY (NEL-ELA)  
FOR DETECTING AND QUANTIFYING NUCLEIC ACIDS

PUBN-DATE: October 17, 2002

## INVENTOR-INFORMATION:

NAME	COUNTRY
BREDEHORST, REINHARD	DE
HINTSCHE, RAINER	DE
HEUBERGER, ANTON	DE

INT-CL (IPC): C12 Q 1/68; G01 N 27/49

EUR-CL (EPC): C12Q001/68; C12Q001/68, G01N027/403 , G01N027/49

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMCC
Draw Desc	Image									

☐ 40. Document ID: EP 47480 A2

L3: Entry 40 of 40

File: EPAB

Mar 17, 1982

PUB-NO: EP000047480A2

DOCUMENT-IDENTIFIER: EP 47480 A2

TITLE: Formation of an immunosome exclusively made of viral antigens reconstituted on an artificial membrane.

PUBN-DATE: March 17, 1982

## INVENTOR-INFORMATION:

NAME	COUNTRY
THIBODEAU, LISE	
BOUDREAULT, ARMAND	
NAUD, PIERRE	

US-CL-CURRENT: 435/238

INT-CL (IPC): A61K 39/12; A61K 9/50; C12N 7/06

EUR-CL (EPC): A61K039/12; A61K039/145, A61K009/127

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMCC
Draw Desc	Clip Img	Image								

[Generate Collection](#)[Print](#)

Terms	Documents
(preformed adj3 liposome\$) same detergent\$	40

Display Format:  [Change Format](#)[Previous Page](#)[Next Page](#)

## WEST Search History

DATE: Monday, June 23, 2003

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
<i>DB=USPT,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>			
L4	liposome\$ same (ethanol adj5 remov\$)	32	L4
L3	L1 and ((424/450)!.CCLS. )	94	L3
L2	L1 and ((424/450)!.CCLS. )	94	L2
L1	liposome\$ same ethanol same remov\$	206	L1

END OF SEARCH HISTORY

**WEST**☐ **Generate Collection** **Print**

L3: Entry 6 of 32

File: USPT

Jun 18, 2002

US-PAT-NO: 6406713

DOCUMENT-IDENTIFIER: US 6406713 B1

TITLE: Methods of preparing low-toxicity drug-lipid complexes

DATE-ISSUED: June 18, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Madden; Thomas D.	Vancouver			CA
Cullis; Pieter R.	Vancouver			CA
Kearns; John J.	Princeton	NJ		
Durning; Anthony G.	Yardley	PA		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
The Liposome Company, Inc.	Princeton	NJ			02

APPL-NO: 08/ 430661 [PALM]

DATE FILED: April 28, 1995

## PARENT-CASE:

CORRESPONDING U.S. PATENT APPLICATIONS This application is a division of U.S. application Ser. No. 07/876,121, filed Apr. 29, 1992, now abandoned, which in turn is a continuation of Ser. No. 07/236,700, filed Aug. 25, 1988, now abandoned, which is a continuation-in-part of U.S. application Ser. No. 07/164,580, filed Mar. 7, 1988 now abandoned, which is a continuation-in-part of U.S. application Ser. No. 07/069,908, filed Jul. 6, 1987, now abandoned, which in turn is a continuation-in-art of U.S. application Ser. No. 07/022,157, filed Mar. 5, 1987, now abandoned. The application is also a continuation-in-part of U.S. application Ser. No. 07/136,267, filed Dec. 22, 1987, now U.S. Pat. No. 4,963,297.

INT-CL: [07] A61 K 9/127

US-CL-ISSUED: 424/450; 428/402.2, 264/4.1, 264/4.3

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 428/402.2

FIELD-OF-SEARCH: 424/450, 424/1.21, 424/9.321, 424/9.51, 424/417, 424/94.3, 264/4.1, 264/4.3, 436/829, 935/54, 428/402.2

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

**Search Selected****Search ALL**

PAT-NO

ISSUE-DATE

PATENTEE-NAME

US-CL

<input type="checkbox"/>	<u>79309</u>	July 1868	Lenk et al.	
<input type="checkbox"/>	<u>225327</u>	July 1880	Lenk et al.	
<input type="checkbox"/>	<u>360964</u>	June 1887	Janoff et al.	
<input type="checkbox"/>	<u>498268</u>	May 1893	Janoff et al.	
<input type="checkbox"/>	<u>604503</u>	May 1898	Janoff et al.	
<input type="checkbox"/>	<u>638809</u>	August 1899	Janoff et al.	
<input type="checkbox"/>	<u>749161</u>	June 1904	Bally et al.	
<input type="checkbox"/>	<u>835832</u>	February 1906	Fountain et al.	
<input type="checkbox"/>	<u>3244590</u>	April 1966	Schaffner et al.	514/31 X
<input type="checkbox"/>	<u>3993754</u>	November 1976	Rahman et al.	424/177
<input type="checkbox"/>	<u>4145410</u>	March 1979	Sears	424/19
<input type="checkbox"/>	<u>4224179</u>	September 1980	Schneider et al.	252/316
<input type="checkbox"/>	<u>4229360</u>	October 1980	Schneider et al.	260/403
<input type="checkbox"/>	<u>4235871</u>	November 1980	Papahadjopoulos et al.	252/316
<input type="checkbox"/>	<u>4310506</u>	January 1982	Baldeschweiler	424/19
<input type="checkbox"/>	<u>4342750</u>	August 1982	Gordon	514/31 X
<input type="checkbox"/>	<u>4358442</u>	November 1982	Wirtz-Pietz et al.	514/78 X
<input type="checkbox"/>	<u>4372949</u>	February 1983	Kodama et al.	424/38
<input type="checkbox"/>	<u>4419348</u>	December 1983	Rahman et al.	514/34
<input type="checkbox"/>	<u>4436746</u>	March 1984	Renfro	424/273
<input type="checkbox"/>	<u>4460577</u>	July 1984	Moro et al.	424/180
<input type="checkbox"/>	<u>4508703</u>	April 1985	Redziniak et al.	424/38
<input type="checkbox"/>	<u>4522803</u>	June 1985	Lenk et al.	424/1.1
<input type="checkbox"/>	<u>4551288</u>	November 1985	Kelly	264/4.6
<input type="checkbox"/>	<u>4588578</u>	May 1986	Fountain et al.	424/1.1
<input type="checkbox"/>	<u>4604376</u>	August 1986	Teng	514/3
<input type="checkbox"/>	<u>4622219</u>	November 1986	Haynes	424/38
<input type="checkbox"/>	<u>4663167</u>	May 1987	Lopez-Berestein et al.	514/37
<input type="checkbox"/>	<u>4687762</u>	August 1987	Fukushima	514/34
<input type="checkbox"/>	<u>4721612</u>	January 1988	Janoff et al.	424/1.1
<input type="checkbox"/>	<u>4766046</u>	August 1988	Abra et al.	424/450
<input type="checkbox"/>	<u>4812312</u>	March 1989	Lopez-Berestein et al.	424/417
<input type="checkbox"/>	<u>4822777</u>	April 1989	Abra	514/31
<input type="checkbox"/>	<u>4880635</u>	November 1989	Janoff et al.	424/450
<input type="checkbox"/>	<u>4897384</u>	January 1990	Janoff et al.	514/34
<input type="checkbox"/>	<u>4963297</u>	October 1990	Madden	264/4.3
<input type="checkbox"/>	<u>4973465</u>	November 1990	Baurain et al.	424/406
<input type="checkbox"/>	<u>5059591</u>	October 1991	Janoff et al.	514/31



<input type="checkbox"/>	<u>5077056</u>	December 1991	Bally et al.	424/450
<input type="checkbox"/>	<u>5100591</u>	March 1992	Leclef et al.	264/4.6
<input type="checkbox"/>	<u>5415867</u>	May 1995	Minchey	424/400

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0069307	January 1983	EP	
0 202 837	November 1986	EP	
0240346	October 1987	EP	
0 260 811	March 1988	EP	
0 296 845	June 1988	EP	
2607719	December 1986	FR	
2611138	February 1987	FR	
87 12424	September 1987	FR	
2041871	September 1980	GB	
85/00968	March 1985	WO	
85/04578	October 1985	WO	
85/05030	November 1985	WO	
86/00238	January 1986	WO	
86/01103	February 1986	WO	
87/02219	April 1987	WO	

## OTHER PUBLICATIONS

Ahrens, et al., Treatment of experimental murine candidiasis with liposomes-associated amphotericin B, 1984; S. Journ. Med. Vet. Mycol, 22:163-166.

Bangham, et al., "Diffusion of Univalent Ions Across the Lamellae of Swollen Phospholipids", 1965; J. Mol. Biol., 13:238-252.

Bartlett, et al., Phosphorus Assay in Column Chromatography, 1959; J. Bio. Chem. 234:466-468.

Burke, et al., "Ligand self-association at the surface of liposomes: a complication during equilibrium-binding studies", Chem. Abstracts, vol. 102, No. 3.

Chapman, "Physicochemical Properties of Phospholipids and Lipid-Water System" in Liposome Technol, 1984; p. 1-18.

Cullis, et al., "Structural Properties of Lipids and Their Functional Roles in Biological membranes", 1983; in Membrane Fluidity in Biology, vol. 1, Academic Press.

Deamer, et al., "Lamellar and Hexagonal Lipid Phases Visualized by Freeze-Etching", 1970; Biochim. Biophys. Acta., 219:47-60.

Deamer, et al., "Permeability of Lipid Bilayers to Water and Ionic Solutes", 1986; Chem. and Phys. of Lipids 40:167-187.

DeKruijff, et al., "Polyene Antibiotic-Sterol Interactions in Membranes of *Acholeplasma laidlawii* Cells and Lecithin Liposomes", BBA 339 (1974) 57-70.

Dufourc et al., "Interaction of Amphotericin B. with membrane Lipids as Viewed by H-NMR", 1984, Biochimica et Biophysica Acta, 778, pp. 435-432.

Graybill, et al., "Treatment of Murine Cryptococcosis with Liposome-Associated Amphotericin B", 1982; J. Infec. Dis. 145:748-752.

Gruner, et al., "Novel Multilayered Lipid Vesicles: Comparison of Physical Characteristics of Multilamellar Liposomes and Stable Plurilamellar Vesicles", 1985; Biochem.: 24:2833-2842.

Herbette, et al., Comparisons of the interaction of propranolol and timolol with model and biological membrane system, Chem. Abstracts vol. 99, No. 23.

Juliano, et al., "Selective Toxicity and Enhanced Therapeutic Index of Liposomal Polyene Antibiotics in Systemic Fungal Infections", 1985; Ann. N. Y. Acad. Sci, 446:390-402.

Klimchak, et al., Scale-up of liposome products, Biopharm. Manufacturing, vol., 1, No.

2, Feb. 1988, pp. 18-21.

Koppel, "Analysis of Macromolecular Polydispersity in Intersity Correlation Spectroscopy: The Method of Cumulants", 1972; J. Chem. Phys. 48:14-4820.

Lopez-Berestein, et al., "Liposomal Amphotericin B for the Treatment of Systemic Fungal Infections in Patients with Cancer: A Preliminary Study", 1985; J. Infect. Dis., 151:704-710.

Lopez-Berestein, et al., Prophylaxis of Candida albicans Infection in Neutropenic Mice with Liposome-Encapsulated Amphotericin B:, 1984; Antimicrob. Agents Chemo. 25(3):366-367.

Lopez-Berestein, et al., Treatment and Prophylaxis of Disseminated Infection Due to Candida albicans in Mice with Liposome-encapsulated Amphotericin B:, 1983; J. Infect. Dis. 147:939-945.

Mayer, et al., "Solute distributions and trapping efficiencies observed in freeze-thawed multilamellar vesicles", 1985; Biochim. Biophys. Acta, 817:193-196.

Panosian, et al., Treatment of Experimental Cutaneous Leishmaniasis with Liposome Intercalated Amphotericin B:, 1984; 25:655-656.

Papahadjopoulos, et al., "Phospholipid Model Membranes", 1967; Biochim. Biophys. Acta., 135:624-638.

Payne, et al., "Characterization of Proliposomes", 1986; J. Pharm. Sci, 75:330-333.

Schaffner, et al., "Anti-viral activity of amphotericin B methyl ester: inhibition of HTLV-III replication in cell culture", 1986; Biochem. Pharmacol. 35:4110-4113.

Shipley, et al., "Recent X-ray Diffraction Studies of Biological Membranes and Membrane Components", in: Biomembranes, 1973:vol. 2:1.

Stevens, et al., "In vitro Antiherpetic Activity of Water-soluble Amphotericin V Methyl Ester", 1975; Arc. Virol. 48:391-394.

Szoka, et al., Comparative Properties and Methods of Preparation of Lipid Vesicles (Liposomes).sup.1, 1980; An.. Rev. Biophys. Bioeng. 9:467-508.

Taylor, et al., "Amphotericin B in Liposomes: A Novel Therapy for Histoplasmosis", 1982; Am. Rev. Respir. Dis 125:610-611.

Trembley, et al., "Efficacy of Liposome-Intercalated Amphotericin B in the Treatment of Systemic Candidiasis in Mice", 1984; Antimicrob. Agents Chemo. 26:170-173.

Venkataram, et al., "Characteristics of Drug-Phospholipid Coprecipitates I: Physical Properties and Dissolution Behavior of Griseofulvin-Dimyristoylphosphatidylcholine Systems", J. Pharm Sci, 73(6):757-761, 1984.

Witzke, et al., "Dissociation Kinetics and Equilibrium Binding Properties of Polyene Antibiotic Complexes with Phosphatidylcholine-Sterol Vesicles", Biochemistry 23 (1984) 8, 1668-1674.

ART-UNIT: 1615

PRIMARY-EXAMINER: Kishore; Gollamudi S.

ATTY-AGENT-FIRM: Burns, Doane, Swecker & Mathis, LLP

#### ABSTRACT:

Methods and compositions are described for nonliposomal lipid complexes in association with toxic hydrophobic drugs such as the polyene antibiotic amphotericin B. Lipid compositions are preferably a combination of the phospholipids dimyristoylphosphatidylcholine (DMPC) and dimyristoylphosphatidylglycerol (DMPG) in about a 7:3 mole ratio. The lipid complexes contain a bioactive agent, and may be made by a number of procedures, at high drug:lipid ratios. These compositions of high drug:lipid complexes (HDLCS) may be administered to mammals such as humans for the treatment of infections, with substantially equivalent or greater efficacy and reduced drug toxicities as compared to the drugs in their free form. Also disclosed is a novel liposome-loading procedure, which may also be used in the formation of the HDLCS.

11 Claims, 22 Drawing figures

**WEST**

Generate Collection

Print

L3: Entry 7 of 32

File: USPT

Apr 2, 2002

DOCUMENT-IDENTIFIER: US 6365179 B1

TITLE: Conjugate having a cleavable linkage for use in a liposome

Detailed Description Text (94):

Ethanol was removed from the liposome suspension by diafiltration. A histidine/sodium chloride solution was prepared by dissolving histidine (10 mM) and sodium chloride (150 mM) in sterile water. The pH of the solution was adjusted to approximately 7. The solution was filtered through a 0.22  $\mu\text{m}$  Durapore filter. The liposome suspension was diluted in approximately a 1:1 (v/v) ratio with the histidine/sodium chloride solution and diafiltered through a polysulfone hollow-fiber ultrafilter. Eight volume exchanges were performed against the histidine/sodium chloride solution to remove the ethanol. The process fluid temperature was maintained at about 20-30.degree. C. Total diafiltration time was approximately 4.5 hours.

**WEST**

Generate Collection

Print

L3: Entry 12 of 32

File: USPT

Nov 16, 1999

DOCUMENT-IDENTIFIER: US 5985318 A

TITLE: Fusogenic liposomes that are free of active neuraminidase

Brief Summary Text (21):

A further method of preparing liposomes comprises the rapid injection of an ethanolic solution of lipid into aqueous saline or a buffer which has previously been purged with nitrogen. The resulting liposome preparation is then concentrated by ultrafiltration with rapid stirring under nitrogen at low pressure to avoid the formation of larger non-heterogeneous liposome. The ethanol may be removed from the vesicle fraction by analysis or washing with an ultra-filter. The polypeptide may be present in aqueous solution or alternatively the liposome fraction obtained after ultrafiltration may be lightly sonicated with the polypeptide.

**WEST**

Generate Collection

Print

L3: Entry 18 of 32

File: USPT

Jan 21, 1997

DOCUMENT-IDENTIFIER: US 5595756 A

TITLE: Liposomal compositions for enhanced retention of bioactive agents

Detailed Description Text (21):

DSPC/Chol (55:45; mol:mol), DSPC/Chol/G.sub.M1 (45:45:10; mol:mol:mol), DSPC/Chol/Stearylamine (45:45:10), DSPC/Chol/AL-1 (45:45:10), or DSPC/Chol/Sphingosine (45:45:10) were prepared by dissolving the lipid mixtures in 95% ethanol (1 mL/100 mg lipid). The mixtures were then heated at 60.degree. C. for 30 min. Subsequently, a preheated (60.degree. C.) solution of 300 mM citric acid (pH 4 or pH 2) was added (3 mL buffer/100 mg total lipid) while vigorously vortex mixing. The resulting multilamellar vesicles ("MLVs") were heated at 60.degree. C. for an additional 30 min., followed by extrusion ten times through two polycarbonate filters with 100 nm pores. The extrusion device, obtained from Lipex Biomembranes (Vancouver, British Columbia, Canada), was also maintained at 60.degree. C. Ethanol was removed from the liposome preparation by dialyzing (Spectra/Por 2 dialysis tubing, 12,000-14,000 molecular weight cut-off against two changes (200 mL dialysis buffer per 1 mL of sample) of 300 mM citric acid (pH 4 or 2) over a 24 h period. It has been determined that greater than 99.9% of the ethanol is removed using this procedure.

**WEST**

Generate Collection

Print

L3: Entry 22 of 32

File: USPT

Nov 16, 1993

DOCUMENT-IDENTIFIER: US 5262168 A

TITLE: Prostaglandin-lipid formulations

Brief Summary Text (8):

Another technique used to form liposomes is the "reverse phase evaporation" (REV) process of Papahadjopoulos (U.S. Pat. No. 4,235,871, issued Nov. 25, 1980). Such process forms oligolamellar lipid vesicles wherein the aqueous material to be encapsulated is added to lipids in organic solvent, forming an water-in-oil type emulsion. The organic solvent is removed, forming a gel. The gel is dispersed in aqueous medium converting it to a suspension. Yet another technique is the detergent-dialysis process (Enoch et al., 1979, Proc. Natl. Acad. Sci., 76:145). In this process, lipid is mixed with a detergent such as deoxycholate in aqueous solution, sonicated, and the detergent removed by gel filtration. A further technique is the ethanol infusion technique of Batzri et al. (1973, Biochim. Biophys. Acta., 298:1015), for forming small unilamellar vesicles, whereby an ethanol solution of lipid is injected into the desired aqueous phase, forming liposomes of about 30 nm to about 2 um in diameter. The residual ethanol may then be removed by rotoevaporation.

**WEST**

Generate Collection

Print

L3: Entry 28 of 32

File: USPT

Jun 21, 1988

DOCUMENT-IDENTIFIER: US 4752425 A

TITLE: High-encapsulation liposome processing method

Detailed Description Text (29):

The infusion process was continued to a final lipid concentration of about 300 .mu.mole/ml, at which about 75% of the drug was encapsulated in the liposomes formd. As in the Example III preparation, which also involved uncharged lipid components, the liposome sizes were heterodisperse, having sizes up to about 10 microns. The ethanol remaining in the liposome suspension after removal of the "Freon" solvent can be removed, if desired, by diafiltration, molecular sieve chromatography, or the like. However, the presence of the ethanol in the suspension does not appear to effect liposome stability or reduce encapsulation efficiency.

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 30 of 32 returned.**☐ 1. Document ID: US 6569867 B2

L3: Entry 1 of 32

File: USPT

May 27, 2003

US-PAT-NO: 6569867

DOCUMENT-IDENTIFIER: US 6569867 B2

TITLE: Polyketide derivatives

DATE-ISSUED: May 27, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chu; Daniel	Santa Clara	CA		
Fardis; Maria	San Carlos	CA		
Khosla; Chaitan	Palo Alto	CA		
Reeves; Christopher	Orinda	CA		
Santi; Daniel	San Francisco	CA		
Schirmer; Andreas	Hayward	CA		

US-CL-CURRENT: 514/291; 540/456

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Draw Desc	Image										

☐ 2. Document ID: US 6506386 B1

L3: Entry 2 of 32

File: USPT

Jan 14, 2003

US-PAT-NO: 6506386

DOCUMENT-IDENTIFIER: US 6506386 B1

TITLE: Vaccine comprising an iscom consisting of sterol and saponin which is free of additional detergent

DATE-ISSUED: January 14, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Friede; Martin	Farnham			GB
Garcon; Nathalie	Wavre			BE

US-CL-CURRENT: 424/184.1; 424/278.1, 424/283.1, 514/25

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Draw Desc	Image										



☐ 3. Document ID: US 6489314 B1

L3: Entry 3 of 32

File: USPT

Dec 3, 2002

US-PAT-NO: 6489314

DOCUMENT-IDENTIFIER: US 6489314 B1

TITLE: Epothilone derivatives and methods for making and using the same

DATE-ISSUED: December 3, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ashley; Gary	Alameda	CA		
Metcalf; Brian	Moraga	CA		

US-CL-CURRENT: 514/183; 540/451, 540/455, 540/461, 540/462, 540/463

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 4. Document ID: US 6465008 B1

L3: Entry 4 of 32

File: USPT

Oct 15, 2002

US-PAT-NO: 6465008

DOCUMENT-IDENTIFIER: US 6465008 B1

TITLE: Liposome-entrapped topoisomerase inhibitors

DATE-ISSUED: October 15, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Slater; James L.	Palo Alto	CA		
Colbern; Gail T.	Pacifica	CA		
Working; Peter K.	Burlingame	CA		

US-CL-CURRENT: 424/450

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 5. Document ID: US 6447800 B2

L3: Entry 5 of 32

File: USPT

Sep 10, 2002

US-PAT-NO: 6447800

DOCUMENT-IDENTIFIER: US 6447800 B2

TITLE: Method of loading preformed liposomes using ethanol

DATE-ISSUED: September 10, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hope; Michael J.	Vancouver			CA

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.6, 424/1.21, 424/417, 424/9.321, 424/9.51

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 6. Document ID: US 6406713 B1

L3: Entry 6 of 32

File: USPT

Jun 18, 2002

US-PAT-NO: 6406713

DOCUMENT-IDENTIFIER: US 6406713 B1

TITLE: Methods of preparing low-toxicity drug-lipid complexes

DATE-ISSUED: June 18, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Madden; Thomas D.	Vancouver			CA
Cullis; Pieter R.	Vancouver			CA
Kearns; John J.	Princeton	NJ		
Durning; Anthony G.	Yardley	PA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 428/402.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 7. Document ID: US 6365179 B1

L3: Entry 7 of 32

File: USPT

Apr 2, 2002

US-PAT-NO: 6365179

DOCUMENT-IDENTIFIER: US 6365179 B1

TITLE: Conjugate having a cleavable linkage for use in a liposome

DATE-ISSUED: April 2, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Zalipsky; Samuel	Redwood City	CA		
Gabizon; Alberto A.	Jerusalem			IL

US-CL-CURRENT: 424/450; 205/254, 424/85.1, 514/1, 530/336, 536/84

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 8. Document ID: US 6355268 B1

L3: Entry 8 of 32

File: USPT

Mar 12, 2002

US-PAT-NO: 6355268

DOCUMENT-IDENTIFIER: US 6355268 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Liposome-entrapped topoisomerase inhibitors

DATE-ISSUED: March 12, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Slater; James L.	Palo Alto	CA		
Colbern; Gail T.	Pacifica	CA		
Working; Peter K.	Burlingame	CA		

US-CL-CURRENT: 424/450

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 9. Document ID: US 6120795 A

L3: Entry 9 of 32

File: USPT

Sep 19, 2000

US-PAT-NO: 6120795

DOCUMENT-IDENTIFIER: US 6120795 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Manufacture of liposomes and lipid-protein complexes by ethanolic injection and thin film evaporation

DATE-ISSUED: September 19, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Klimchak; Robert Joseph	Flemington	NJ		
Glavinovs, Jr., deceased; Peter G.	late of Dayton	OH		

US-CL-CURRENT: 424/450; 424/1.21, 514/12, 514/2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 10. Document ID: US 6086851 A

L3: Entry 10 of 32

File: USPT

Jul 11, 2000

US-PAT-NO: 6086851

DOCUMENT-IDENTIFIER: US 6086851 A

TITLE: Pharmaceutical compositions containing interdigitation-fusion liposomes and gels

DATE-ISSUED: July 11, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Boni; Lawrence T.	Monmouth Junction	NJ		
Janoff; Andrew S.	Yardley	PA		
Minchey; Sharma R.	Monmouth Junction	NJ		
Perkins; Walter R.	Monmouth Junction	NJ		
Swenson; Christine E.	Princeton Junction	NJ		
Ahl; Patrick L.	Princeton	NJ		
Davis; Thomas S.	Valhalla	NY		

US-CL-CURRENT: 424/9.4; 264/4.1, 264/4.3, 264/4.32, 424/450, 428/402.2, 428/402.24

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 11. Document ID: US 6054309 A

L3: Entry 11 of 32

File: USPT

Apr 25, 2000

US-PAT-NO: 6054309

DOCUMENT-IDENTIFIER: US 6054309 A

TITLE: Ceramide glucosyltransferase

DATE-ISSUED: April 25, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hirabayashi; Yoshio	Saitama			JP
Ichikawa; Shin-ichi	Saitama			JP

US-CL-CURRENT: 435/252.3; 435/193, 435/254.11, 435/320.1, 435/325, 536/23.2, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 12. Document ID: US 5985318 A

L3: Entry 12 of 32

File: USPT

Nov 16, 1999

US-PAT-NO: 5985318

DOCUMENT-IDENTIFIER: US 5985318 A

TITLE: Fusogenic liposomes that are free of active neuraminidase

DATE-ISSUED: November 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ford; Martin James	Beckenham			GB

US-CL-CURRENT: 424/450; 424/193.1, 424/204.1, 424/206.1, 435/236

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 13. Document ID: US 5925375 A

L3: Entry 13 of 32

File: USPT

Jul 20, 1999

US-PAT-NO: 5925375

DOCUMENT-IDENTIFIER: US 5925375 A

TITLE: Therapeutic use of multilamellar liposomal prostaglandin formulations

DATE-ISSUED: July 20, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lenk; Robert P.	The Woodland	TX		
Tomsho; Michelle L.	Levittown	PA		
Suddith; Robert L.	Wilmington	NC		
Klimchak; Robert J.	Flemington	NJ		
Janoff; Andrew S.	Yardley	PA		
Minchey; Sharma R.	Monmouth Junction	NJ		
Ostro; Marc J.	Pennington	NJ		

US-CL-CURRENT: 424/450; 514/573

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 14. Document ID: US 5820848 A

L3: Entry 14 of 32

File: USPT

Oct 13, 1998

US-PAT-NO: 5820848

DOCUMENT-IDENTIFIER: US 5820848 A

TITLE: Methods of preparing interdigitation-fusion liposomes and gels which encapsulate a bioactive agent

DATE-ISSUED: October 13, 1998

INVENTOR-INFORMATION:

NAME.	CITY	STATE	ZIP CODE	COUNTRY
Boni; Lawrence T.	Monmouth Junction	NJ		
Janoff; Andrew S.	Yardley	PA		
Minchey; Sharma R.	Monmouth Junction	NJ		
Perkins; Walter R.	Monmouth Junction	NJ		
Swenson; Christine E.	Princeton Junction	NJ		
Ahl; Patrick L.	Princeton	NJ		
Davis; Thomas S.	Valhalla	NY		

US-CL-CURRENT: 424/9.4; 264/4.1, 424/1.21, 424/450, 424/9.321, 436/829, 516/102

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 15. Document ID: US 5811118 A

L3: Entry 15 of 32

File: USPT

Sep 22, 1998

US-PAT-NO: 5811118

DOCUMENT-IDENTIFIER: US 5811118 A

TITLE: Methods of treatment using unilamellar liposomal arachidonic acid metabolite formulations

DATE-ISSUED: September 22, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ostro; Marc J.	Pennington	NJ		
Janoff; Andrew S.	Yardley	PA		
Minchey; Sharma R.	Monmouth Junction	NJ		

US-CL-CURRENT: 424/450; 514/573

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 16. Document ID: US 5780284 A

L3: Entry 16 of 32

File: USPT

Jul 14, 1998

US-PAT-NO: 5780284

DOCUMENT-IDENTIFIER: US 5780284 A

TITLE: Ceramide glucosyltransferase

DATE-ISSUED: July 14, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hirabayashi; Yoshio	Saitama			JP
Ichikawa; Shin-ichi	Saitama			JP

US-CL-CURRENT: 435/193

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 17. Document ID: US 5616334 A

L3: Entry 17 of 32

File: USPT

Apr 1, 1997

US-PAT-NO: 5616334

DOCUMENT-IDENTIFIER: US 5616334 A

TITLE: Low toxicity drug-lipid systems

DATE-ISSUED: April 1, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Janoff; Andrew S.	Yardley	PA		
Boni; Lawrence	Monmouth Junction	NJ		
Madden; Thomas D.	Vancouver			CA
Cullis; Pieter R.	Vancouver			CA
Lenk; Robert P.	Lambertville	NJ		
Kearns; John J.	Princeton	NJ		
Durning; Anthony G.	Yardley	PA		
Klimchak; Robert	Flemington	NJ		
Portnoff; Joel	Richboro	PA		

US-CL-CURRENT: 424/404; 264/4.1, 264/4.3, 264/4.6, 428/402.2, 436/164, 514/78

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 18. Document ID: US 5595756 A

L3: Entry 18 of 32

File: USPT

Jan 21, 1997

US-PAT-NO: 5595756

DOCUMENT-IDENTIFIER: US 5595756 A

TITLE: Liposomal compositions for enhanced retention of bioactive agents

DATE-ISSUED: January 21, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bally; Marcel B.	Bowen Island			CA
Boman; Nancy L.	Richmond			CA
Cullis; Pieter R.	Vancouver			CA
Mayer; Lawrence D.	North Vancouver			CA

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

---

☐ 19. Document ID: US 5567434 A

L3: Entry 19 of 32

File: USPT

Oct 22, 1996

US-PAT-NO: 5567434

DOCUMENT-IDENTIFIER: US 5567434 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: October 22, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.6, 264/4.7, 424/1.21, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

---

☐ 20. Document ID: US 5549910 A

L3: Entry 20 of 32

File: USPT

Aug 27, 1996

US-PAT-NO: 5549910

DOCUMENT-IDENTIFIER: US 5549910 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: August 27, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.6, 264/4.7, 424/1.21, 424/9.321, 424/9.4, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

---

☐ 21. Document ID: US 5277914 A

L3: Entry 21 of 32

File: USPT

Jan 11, 1994

US-PAT-NO: 5277914

DOCUMENT-IDENTIFIER: US 5277914 A

TITLE: Preparation of liposome and lipid complex compositions



DATE-ISSUED: January 11, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/450; 264/4.1, 264/4.3, 264/4.7, 424/484, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 22. Document ID: US 5262168 A

L3: Entry 22 of 32

File: USPT

Nov 16, 1993

US-PAT-NO: 5262168

DOCUMENT-IDENTIFIER: US 5262168 A

TITLE: Prostaglandin-lipid formulations

DATE-ISSUED: November 16, 1993

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lenk; Robert P.	Lambertville	NJ		
Tomsho; Michelle L.	Levittown	PA		
Suddith; Robert L.	Robbinsville	NJ		
Klimchak; Robert J.	Flemington	NJ		

US-CL-CURRENT: 424/450; 264/4.3, 264/4.6, 428/402.2, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 23. Document ID: US 5154930 A

L3: Entry 23 of 32

File: USPT

Oct 13, 1992

US-PAT-NO: 5154930

DOCUMENT-IDENTIFIER: US 5154930 A

TITLE: Pharmacological agent-lipid solution preparation

DATE-ISSUED: October 13, 1992

## INVENTOR-INFORMATION:

NAME .	CITY	STATE	ZIP CODE	COUNTRY
Popescu; Mircea C.	Plainsboro	NJ		
Tremblay; Paul A.	Hamilton	NJ		
Janoff; Andrew S.	Yardley	PA		
Ostro; Marc J.	Princeton	NJ		
Chan; Elaine	Willow Grove	PA		
Weiner; Alan	Lawrenceville	NJ		

US-CL-CURRENT: 424/1.21; 424/450, 424/452, 424/455, 424/456, 424/489, 424/492,  
428/402.2, 436/829, 514/78, 514/885, 514/937

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

---

☐ 24. Document ID: US 5120411 A

L3: Entry 24 of 32

File: USPT

Jun 9, 1992

US-PAT-NO: 5120411

DOCUMENT-IDENTIFIER: US 5120411 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Photodynamic activity of sapphyrins

DATE-ISSUED: June 9, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sessler; Jonathan L.	Austin	TX		
Harriman; Anthony	Austin	TX		
Maiya; Bhaskar G.	Hyderabad			IN

US-CL-CURRENT: 204/157.15; 204/157.61

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

---

☐ 25. Document ID: US 5082664 A

L3: Entry 25 of 32

File: USPT

Jan 21, 1992

US-PAT-NO: 5082664

DOCUMENT-IDENTIFIER: US 5082664 A

TITLE: Prostaglandin-lipid formulations

DATE-ISSUED: January 21, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lenk; Robert P.	Lambertville	NJ		
Tomsho; Michelle L.	Levittown	PA		
Suddith; Robert L.	Robbinsville	NJ		
Klimchak; Robert J.	Flemington	NJ		

US-CL-CURRENT: 424/450; 264/4.3, 428/402.2, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 26. Document ID: US 5077057 A

L3: Entry 26 of 32

File: USPT

Dec 31, 1991

US-PAT-NO: 5077057

DOCUMENT-IDENTIFIER: US 5077057 A

TITLE: Preparation of liposome and lipid complex compositions

DATE-ISSUED: December 31, 1991

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Szoka, Jr.; Francis C.	San Francisco	CA		

US-CL-CURRENT: 424/1.21; 264/4.1, 264/4.3, 264/4.7, 424/450, 424/484, 424/9.321, 424/9.4, 424/9.51, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 27. Document ID: US 4781871 A

L3: Entry 27 of 32

File: USPT

Nov 1, 1988

US-PAT-NO: 4781871

DOCUMENT-IDENTIFIER: US 4781871 A

TITLE: High-concentration liposome processing method

DATE-ISSUED: November 1, 1988

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
West, III; Glenn	San Carlos	CA		
Martin; Francis J.	San Francisco	CA		

US-CL-CURRENT: 264/4.3; 264/4.6, 424/450, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 28. Document ID: US 4752425 A

L3: Entry 28 of 32

File: USPT

Jun 21, 1988

US-PAT-NO: 4752425

DOCUMENT-IDENTIFIER: US 4752425 A

TITLE: High-encapsulation liposome processing method

DATE-ISSUED: June 21, 1988

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Martin; Francis J.	San Francisco	CA		
West, III; Glenn	San Carlos	CA		

US-CL-CURRENT: 264/4.6; 424/450, 428/402.2, 436/829

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 29. Document ID: US 4687661 A

L3: Entry 29 of 32

File: USPT

Aug 18, 1987

US-PAT-NO: 4687661

DOCUMENT-IDENTIFIER: US 4687661 A

TITLE: Method for producing liposomes

DATE-ISSUED: August 18, 1987

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kikuchi; Hiroshi	Tokyo			JP
Yamauchi; Hitoshi	Tokyo			JP

US-CL-CURRENT: 124/38; 264/4.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 30. Document ID: US 4196191 A

L3: Entry 30 of 32

File: USPT

Apr 1, 1980

US-PAT-NO: 4196191

DOCUMENT-IDENTIFIER: US 4196191 A

TITLE: Biological preparations

DATE-ISSUED: April 1, 1980

## INVENTOR - INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Almeida; June D.	London			GB2
Edwards; David C.	Beckenham			GB2

US-CL-CURRENT: 424/450; 424/196.11, 424/210.1, 424/212.1, 424/221.1, 424/229.1,  
424/230.1, 424/283.1, 424/812

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw. Desc	Image									

[Generate Collection](#)[Print](#)

Terms	Documents
liposome\$ same (ethanol adj5 remov\$)	32

**Display Format:**

-

[Change Format](#)[Previous Page](#)[Next Page](#)

**WEST**[Generate Collection](#)[Print](#)

Search Results - Record(s) 31 through 32 of 32 returned.

☐ 31. Document ID: US 4148876 A

L3: Entry 31 of 32

File: USPT

Apr 10, 1979

US-PAT-NO: 4148876

DOCUMENT-IDENTIFIER: US 4148876 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Biological preparations

DATE-ISSUED: April 10, 1979

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Almeida; June D.	London			GB2
Edwards; David C.	Beckenham			GB2

US-CL-CURRENT: 424/450; 424/196.11, 424/210.1, 424/812

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 32. Document ID: JP 06256212 A

L3: Entry 32 of 32

File: DWPI

Sep 13, 1994

DERWENT-ACC-NO: 1994-329949

DERWENT-WEEK: 199441

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Aureobasidines liposome used as an injection in form of a suspension -  
comprises liposome(s) composed of Aureobasicines-contg. phospholipid(s)

PRIORITY-DATA: 1993JP-0062440 (March 1, 1993)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 06256212 A	September 13, 1994		007	A61K037/02

INT-CL (IPC): A61K 9/127; A61K 37/02

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Clip Img	Image									

[Generate Collection](#)[Print](#)

Terms	Documents
liposome\$ same (ethanol adj5 remov\$)	32

---

**Display Format:**

-

**Change Format**[Previous Page](#)[Next Page](#)

## WEST Search History

DATE: Monday, June 23, 2003

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
	<i>DB=USPT,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
L3	liposome\$ same (ethanol adj5 remov\$)	32	L3
L2	liposome\$ same (ethanol adj5 remov\$)	32	L2
L1	liposome\$ same (ethanol adj5 remov\$)	32	L1

END OF SEARCH HISTORY